

**Abstract**

A residual current device includes a current transformer CT1  
5 for sensing a differential current flowing in mains supply  
live L and neutral N conductors and a residual current  
actuator RCA for disconnecting the supply from a load when the  
differential current exceeds a predetermined level. The  
device also includes a circuit for detecting a double grounded  
10 neutral fault NF. Such circuit causes a current  $I_Z$  to flow  
between the live and neutral conductors on the load LD side of  
the current transformer, such current being at least  
intermittently of sufficiently high amplitude and duration as  
to cause disconnection of the supply by the component of the  
15 current  $I_Z$  flowing through the current transformer in the  
presence of a double grounded neutral fault.